CLAIMS

1. (Currently amended) A biosensor with multi-channel A/D conversion, comprising:

a chip ~~generating~~ to generate a time-dependent analog signal in response to ~~a content of a specific component of a specimen provided on said chip~~ an enzyme reaction initiated by a specific component of a specimen making contact with the chip;

a multi-channel A/D converter with multiple channels each of which is configured to simultaneously ~~receiving~~ receive the time-dependent analog signal in each sampling interval, ~~in order that said~~ the multi-channel A/D converter ~~converts~~ being configured to convert the time-dependent analog signal to a set of digital signals; and

a microprocessor ~~receiving~~ to receive the set~~s~~ of digital signals in a sampling period ~~of sampling time~~ and ~~determining~~ to determine the content of the specific component based on the set~~s~~ of digital signals.

2. (Currently amended) The biosensor of claim l, wherein the time-dependent analog signal ~~is in a form of~~ includes a response current.

3. (Original) The biosensor of claim 2, further comprising a current/voltage converter to convert the time-dependent analog signal to a time dependent output voltage prior to sending to said multi-channel A/D converter.

4. (Original) The biosensor of claim 3, wherein said current/voltage converter includes an operational converter.

5. (Original) The biosensor of claim 1, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic circuit.

6. (Original) The biosensor of claim 3, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic circuit.

7. (Original) The biosensor of claim 4, wherein said multi-channel A/D converter includes a sampler, a multi-channel converter and a logic circuit.

8. (Currently amended) The biosensor of claim 1,

wherein said microprocessor includes a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of a time-dependent discharge curve constituted by the ~~set~~s of digital signals collected during the sampling period ~~of sampling time,~~; and

wherein said microprocessor ~~determines~~ is configured to determine the content of the specific component in accordance with the mapping table.

9. (Currently amended) The biosensor of claim 3,

wherein said microprocessor includes a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of a time-dependent discharge curve constituted by the ~~set~~s of digital signals collected during the sampling period ~~of sampling time,~~; and

wherein said microprocessor ~~determines~~ is configured to determine the content of the specific component in accordance with the mapping table.

10. (Currently amended) The biosensor of claim 1,

wherein said microprocessor includes a mapping table of rising time versus content of the specific component, the rising time corresponding to a maximum value of a time-dependent discharge curve constituted by the sets of digital signals collected during the sampling period ~~of sampling time,~~; and

wherein said microprocessor ~~determines~~ is configured to determine the content of the specific component in accordance with the mapping table.

11. (Currently amended) The biosensor of claim 3,

wherein said microprocessor includes a mapping table of rising time versus content of the specific component, the rising time corresponding to a maximum value of a time-dependent

discharge curve constituted by the sets of digital signals collected during the sampling period ~~of sampling time,~~; and

wherein said microprocessor ~~determines~~ is configured to determine the content of the specific component in accordance with the mapping table.

12. (Currently amended) The biosensor of claim 1, wherein further comprising a liquid crystal display ~~for displaying~~ to display a reading of the content of the specific component.

13. (Currently amended) The biosensor of claim 3, wherein further comprising a liquid crystal display ~~for displaying~~ to display a reading of the content of the specific component.

14. (Currently amended) A method for determining a content of a specific component of a specimen, comprising:

~~providing a specimen on a chip of a biosensor to generate~~ generating a time-dependent analog signal in response to a content of a specific component of the specimen initiating an enzyme reaction on a chip of a biosensor;

simultaneously sending the time-dependent analog signal to each channel of a multi-channel A/D converter for converting to a set of digital signals during each sampling time;

sending the set of digital signals to a microprocessor; and

determining the content of the specific component in accordance with the set~~s~~ of digital signals collected during a sampling period ~~of sampling time~~.

15. (Original) The method of claim 14, wherein the time-dependent analog signal is in a form of response current.

16. (Currently amended) The method of claim 15, further comprising ~~a step of~~ converting the time-dependent analog signal to a time-dependent output voltage prior to converting to the set of digital signals.

17. (Currently amended) The method of claim 14, wherein further comprising ~~a step of~~ establishing a time-dependent discharge curve in accordance with the sets of digital signals collected during the sampling period ~~of sampling time~~.

18. (Original) The method of claim 17, wherein the content of the specific component is determined in accordance with the time-dependent discharge curve and a mapping table of peak value versus content of the specific component, the peak value representing a maximum value of the time-dependent discharge curve.

19. (Original) The method of claim 17, wherein the content of the specific component is determined in accordance with the time-dependent discharge curve and a mapping table of rising time versus content of the specific component, the rising time corresponding to a maximum value of the time-dependent discharge curve.

20. (Currently amended) The method of claim 16, wherein further comprising ~~a step of~~ establishing a voltage-time discharge curve in accordance with the sets of digital signals collected during the sampling period ~~of sampling time~~.